



Smart Grid Implementation Workshop
Breakout Group Report

***Enabling ~~Active~~ Informed
Participation by ~~Consumers~~
Customers***

June 20, 2008
Washington DC

Major Findings / Caveats

- Design options to optimize system resources
- Provide customers with options, capability and information to manage energy usage
- Diversity of options may be unique to regions, utility, delivery point
- Design rates to reflect appropriate economic signals
- Informed rather than “active”
 - Let customers make their own economic decisions and manage their use and bills
- Feedback loop to improve coordination between utility and consumers and to minimize customer disruptions and improve customer service

Assumptions

- Smart Grid investments are appropriate and will receive regulators' and legislators' support when the value exceeds consumer costs
- Too early to presume targets for metrics
- Technology will become available to fill needs
- Customer education will be accomplished
- New entrants will enter the market



Metrics for Measuring Progress

- Percent of customers/premises capable of receiving information from the grid (Potential)
- Percent of customers opting to make decisions and/or delegate decision-making authority (Actual)
- Number of communication-enabled, customer-side of the meter devices sold (Cumulative / Potential)
- Number of customer-side of the meter devices sending or receiving grid related signals (Actual)
- Amount of load managed
- Measurable energy savings by customers



Percent of customers / premises capable of receiving information from the grid – Percent of customers opting to make decisions and/or delegate decision-making authority

■ ISSUES

- Utility communication signaling infrastructure to customer or end use device
- Acknowledgment of signals
- Customer's actual response (technical penetration and standards development)

■ SOURCES AND METHODS

- FERC form 1
- Trade groups

■ BASELINE & TRACKING QUESTIONS

- % of customers that already have information
- % of enabled customers



Number of communication – enabled, customer-side devices sold (cumulative)

■ ISSUES

- Definition of “communication enabled”
- Varying product lifecycles distort cumulative data (some last longer)
- What types of devices to include

■ SOURCES AND METHODS

- Define device label (e.g., energy star/saving label)
- Data on sales from manufacturing trade groups and utilities data
- End use customer statistical sampling

■ BASELINE & TRACKING QUESTIONS

- Assume baseline to be zero
- Track progress quarterly with adjustments for product life cycles



Number of customer devices sending or receiving grid related signals

▪ ISSUES

- Who is responsible for providing the data?
- Define “devices”
- Relate device data to demographic information

▪ SOURCES AND METHODS

- Need additional consumer demographic information
- Obtain count from entity responsible for device enrollment
- Actual count vs statistical sampling

▪ BASELINE & TRACKING QUESTIONS

- Demographic breakdown of results
- Type of devices
- Quality of data



Amount of Load Managed

- ISSUES

- Forecasted business as usual (weather normalized), expected impact, actual DR
- Expected impact of providing info to customers
- Measure actual demand response

- SOURCES AND METHODS

- Utility, RTO, FERC data

- BASELINE & TRACKING QUESTIONS

- Necessary accuracy?
- Effect attributable to smart grid vs other forces (Public Service Announcement, TOU vs. dynamic price signal)

Measurable Customer Energy Savings

■ ISSUES

- Define savings to customer (\$, KWh, \$/KWh)
- Account for new load additions
- Energy Efficiency vs Smart Grid savings

■ SOURCES AND METHODS

- Gross average utility / customer segment / gas and electric
- DMV on PHEV stats
- Regulators

■ BASELINE & TRACKING QUESTIONS

- Determine best unit metric
- How do you measure what SG delivers vs. energy efficiency
- How does DG get factored in – PV, PHEV, Storage

Path(s) Forward

- Educate regulators, legislators and others on the opportunities provided by the smart grid, and the costs and benefits of smart grid investments
- Support timely cost recovery of prudently incurred regulated utility smart grid expenditures including accelerated recovery of investments in existing grid infrastructure being replaced by smart grid investments
- Support appropriate deployment of the infrastructure for the communication of information necessary for informed decisions
- Lobby Congress to appropriate funds to support EISA '07 programs
- Encourage service providers and others to develop interoperable devices, programs and other services that enable customers
- Encourage timely development for interoperability



Suggestions for DOE

- Add FCC to DOE Task Force
- SG work shop part 2